Energy Policy Update

Energy and Environmental News

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ARIZONA

Arizona Corporation Commission Revisiting Issue of Electric Competition

REGULATORS SEEK STAKEHOLDER INPUT; CRITICS SAY RISKS OUTWEIGH BENEFIT OF LOWER RATES [Arizona Daily Star, June 30] A decade after Arizona scrapped rules to open the state's retail electric market to competition, state regulators are mulling a new move to allow consumers to choose their power providers. The move would allow ratepayers to choose who supplies their power - though it would still be delivered by local utilities - and could offer consumers lower rates and more services. But critics say any rate benefit would be outweighed by other risks. The move to competition is being driven by a political shift at the elected Arizona Corporation Commission, businesses that want to save money by choosing power providers, and power retailers eager to tap into Arizona's electric markets. But results in the 17 states that have some form of retail electric competition have been mixed - particularly for residential ratepayers - and groups such as AARP say the move would do little to lower electric bills and could open consumers up to abusive market practices. Mindful of such concerns, the Corporation Commission will move cautiously before formally adopting any competitive plan, Chairman Bob Stump said.

Arizona Law Puts Brakes on Tesla Car Sales

[YourWestValley.com website, June 24] Want one of those new Tesla all-electric cars that Consumer Reports has been raving about? If you're an Arizona resident, you're going to have to jump through some extra hoops, all because of a state law designed to protect car dealers. Yes, you can go take a look at the cars, which start at $70,000, at what the company calls its "gallery" at Scottsdale Fashion Square mall. You can kick the tires, sit behind the wheel and ask questions. But you can't buy one there. And you can't take it for a test drive. In fact, the employees in Arizona really can't even talk much about price. Instead, you have to either drive to California or decide you like it so much that you're willing to place an order online — with a $2,500 refundable deposit. It's not by choice,

explains company spokeswoman Shanna Hendriks. “In order to sell cars in Arizona, you need to have a dealer’s license,” she said. And Tesla does have some dealerships elsewhere. But not here. “A manufacturer cannot be a dealer in this state,” said Bobbi Sparrow, president of the Arizona Automobile Dealers Association. Arizona law prohibits manufacturers from selling directly to Arizona consumers. And that, she said, is by intent. “We put that in law in 2000,” Sparrow said. One purpose, she said, is ensuring that buyers have dealerships available should a vehicle be recalled or need service. And Sparrow said since most areas have multiple dealerships, that ensures competition for customers which, in turn, keeps prices down.

Brewer Signs Sales Tax Overhaul, Says It Makes Arizona Better Place To Do Business

[East Valley Tribune, June 25] Saying it makes Arizona a friendlier place to do business, Gov. Jan Brewer signed a major overhaul Tuesday of how the state and cities collect sales taxes and audit businesses to ensure compliance. The measure places some new limits on what cities can tax beyond what is already subject to the state sales tax. That should provide some assistance to firms that do business in multiple communities and now have a difficult time figuring out what products and services are subject to each city's tax. Potentially more significant for businesses, the change eliminates the ability of each city to audit a company's books, a process that business owners say makes for multiple audits of the same transactions. And it means that contractors who do home repairs and renovations will pay sales taxes on their supplies at the time of purchase. That eliminates the requirement to compute and pay the levy when the project is completed. More to the point, it means that contractors cannot cheat the system by buying supplies tax-free and then failing to report the sales they make. For consumers, the most visible difference is likely to come if and when Congress approves the Marketplace Fairness Act. It permits states to require firms that sell products on the Internet to collect the applicable sales tax.

'Cool Islands' Could Be Solution to Urban Heat Islands, Say ASU Researchers

[ASU News, June 21] In a recent National Science Foundation article titled "Summertime: Hot Time in the City," several sustainability scientists from the Global Institute of Sustainability and ASU's Central Arizona-Phoenix Long-Term Ecological Research (CAP LTER) highlight their research on Phoenix's urban heat island effects. Urban heat islands, or areas where temperatures are significantly higher than surrounding rural communities, tend to happen in cities where concrete, buildings and black asphalt replace cool-inducing vegetation. These higher temperatures have deadly effects on vulnerable populations like the elderly, poor and homeless, who may not have easy access to air conditioning and the cooler indoors. Sustainability scientist Sharon Harlan is a sociologist who studies the human-environment interactions behind class, gender and ethnic inequalities. She believes we are the cause of urban heat islands.

Duncan, Graham Co-Ops May Face Easier EPA Demands

[Eastern Arizona Courier, June 26] TUCSON — U.S. Rep. Ron Barber, D-Ariz., announced last week that the Environmental Protection Agency has agreed to review an alternative proposal to its requirement that a power plant in Cochise County must make costly modifications to reduce regional haze. The Arizona Electric Power Cooperative — or AEPCO — serves more than 350,000 residential, commercial, agricultural and industrial customers. The customer base includes many residents of Greenlee, Graham and Cochise counties. Recipients of power from AEPCO’s Apache Plant near Benson include six Class A Member Cooperatives that receive wholesale power from AEPCO, three of which are local: Duncan Valley Electric Cooperative in Duncan, Graham County Electric Cooperative in Pima and Sulphur Springs Valley Electric Cooperative in Willcox. Other cooperatives served by AEPCO are located in southern Arizona in Marana, northwestern Arizona in Bullhead City and Mohave County.

EPA Extends Comment Period for Navajo Power Plant Near Page

[Arizona Daily Sun, June 28] PAGE — The federal government is giving the public more time to weigh in on pollution controls for a coal-fired power plant on the Navajo Nation. The Environmental Protection Agency has proposed that nitrogen oxide emissions at the Navajo Generating Station in Page be cut by 84 percent within 10 years. But the agency says it’s open to hearing alternatives to help improve air quality at places like the Grand Canyon. The plant’s operator, Salt River Project, has said it needs more time to do so and asked the EPA to extend the comment period. The EPA agreed this week, and set a new deadline of Oct. 4.

Secretary Jewell Announces Approval of Major Wind Energy Project on Public Lands in Arizona

Announcement Follows Release of President Obama’s Plan to Cut Carbon Pollution, Grow American-Made Energy

[U.S Department of Interior, June 28] WASHINGTON, D.C. – As part of President Obama’s comprehensive plan to reduce carbon pollution, move our economy toward American-made clean energy sources and begin to slow the effects of climate change, Secretary of the Interior Sally Jewell today announced the approval of a major wind energy project in Arizona that, when built, will provide up to 500 megawatts to the electricity grid -- enough energy to power up to 175,000 houses – and create approximately 750 jobs through construction and operations. As part of President

Obama's comprehensive climate action plan, he challenged the U.S. Department of the Interior to approve an additional 10,000 above the original goal of 10,000 megawatts of renewable energy production on public lands by 2020. The project, proposed by BP Wind Energy North America, Inc., would erect up to 243 wind turbines on Federal lands for the Mohave County Wind Farm, which would be located in northwestern Arizona about 40 miles northwest of Kingman.

Solar-Panel Lease Can Snarl Home Sale

[AzCentral.com, June 29] Real-estate agents say families who lease solar panels and end up putting their homes on the market are having a tough time closing a deal. There are 11,964 single-family homes up for sale in Maricopa County; 134 of them have solar panels that were bought outright by the owners, and 33 have solar panels that were leased by the owners. Melisa Camp, with Smart Home Elite, said that a buyer may need a credit score of at least 700 to take over the lease of solar panels staying with a home. Real-estate agents said if the company that installed the panels refuses to lease to the homebuyer, utility companies will demand their rebate money back. That could run into the thousands of dollars. The question is, who will repay the rebate? There's no clear answer, Camp said. "You could take it to a court of law, and some have, but the title companies don't know to look at this," Camp said. "Typically, on these panels nothing is recorded so they're (real-estate agents) not finding them in their listings, so they're passing the home off as a clean title and these solar panels hang in the balance." Call 12 for Action put in a call to Solar City, a company that leases solar panels to customers throughout the Valley. A customer-service representative said most companies need a 700 credit score to lease solar panels to customers, but that isn't a hard-and-fast rule. It just makes the transaction from homeseller to homebuyer more difficult.

ALTERNATIVE ENERGY AND EFFICIENCY

Empire State Building Retrofit Being Replicated Across the US

[SustainableBusiness.com News, June 26] Energy efficiency upgrades to NYC's Empire State Building have been so successful they are seen as a model for building retrofits that's being rolled out across the US. For the second consecutive year, the building exceeded its "guaranteed energy savings." In 2011, the Empire State Building beat its year-one energy-efficiency guarantee by 5%, saving $2.4 million, and in year two, it beat it by almost 4%. The core building retrofit is completed except for the build-out of high performance space for new tenants. Once that's finished, $4.4 million is expected to be saved each year, about a 38% cut in energy consumption. The Empire State Building upgrade focused on eight key areas: refurbishing all 6514 windows; installing insulation behind all radiators; a chiller plant retrofit; new building management systems controls; new revenue-grade meters serving the entire building; and a web-based tenant energy management system. They also upgraded to all LED lighting and all 68 elevators are 30% more efficient and able to send excess energy back to the building's grid. In total, the retrofit will cost $550 million. Johnson Controls guaranteed the energy savings through a $20 million performance contract - the retrofit is paid through the energy saved over the life of the contract. If the savings aren't realized, Johnson Controls pays the difference.

Energy Efficiency: Home Internet Devices Use Enough to Power Silicon Valley

[The Energy Collective, June 25] Although appliances and consumer electronics are getting more efficient, they still represent about 35 percent of the energy consumed in U.S. homes. And it's not just the big appliances using up energy. A 2011 study from the Natural Resources Defense Council (NRDC) found that typical HD-DVR cable boxes consumed more electricity than a new Energy Star-rated refrigerator. Because electronic devices use nearly one-quarter of electricity while in "standby" mode, they cumulatively add up to a major source of consumption within homes. (Interestingly, the study also found that the newest DVR models had cut energy consumption in half.) Here's another silent energy consumer to add to the list: internet connection equipment. NRDC just released an analysis of small network equipment like routers and modems, finding that these devices together in a household consume about as much energy as a new flat-screen television. On a nationwide basis, these devices consume 8.3 billion kilowatt-hours a year -- more than the consumption of every home in Silicon Valley. Just as with DVR boxes, the newest models for networking equipment feature far superior energy performance. The NRDC analysis found that a full-on switch to energy efficient models could save 2.8 billion kilowatt-hours of electricity, which would translate into roughly $330 million a year in savings. Making that switch isn't easy today. Energy Star still hasn't finalized ratings for these technologies, which means consumers have very little information to consider (if they even care about the energy performance of a modem in the first place). And the switch would need to come from internet providers just as much as consumers, as a lot of customers get their routers and modems from service providers rather than purchasing them in stores. However, internet providers have very little incentive to encourage lowering energy use. NRDC suggested crafting performance mandates to encourage broader adoption of efficient internet equipment.

Renewable Energy Use Gaining Worldwide: IEA

[PhysOrg News, June 26] Renewables like solar and wind represent the fastest-growing source of energy power generation and will make up a quarter of the global power mix by 2018, the International Energy Agency said in a report Wednesday. The IEA said that in 2016 renewable energy will overtake natural gas as a power source and will be twice that of nuclear, and second only to coal as a source of power. The growth of renewables "is a bright spot in an otherwise bleak assessment of global progress towards a cleaner and more diversified energy mix," said IEA Executive Director Maria van der Hoeven. The growth of the renewables—non-fossil fuels like hydropower, wind, solar, geothermal and bioenergy—has been bolstered by increased competitiveness compared with conventional energy, the IEA said. The sector is growing especially fast in China and other developing and emerging countries. The IEA said non-hydro renewable power, mainly wind and solar photovoltaics, is projected to grow from 4 percent of all power generation in 2011 to 8 percent in 2018.

Sharp Hits Record 44.4% Efficiency for Triple-Junction Solar Cell

NREL sets a two-junction-cell high mark. Solar efficiency records continue to fall.

[New Fuelist, June 24] Multi-junction, compound-semiconductor solar cells from the III-V family are capable of gaudy efficiency numbers. Researchers at NREL just announced a 31.1 percent conversion efficiency for a two-junction photovoltaic cell of less than 1 sun. The previous record was 30.8 percent and held by Alta Devices. The tandem cell was gallium indium phosphide on gallium arsenide and was developed within the SunShot program, aiming to build a 48-percent-efficient concentrator cell. Sharp just hit a Fraunhofer-Institute-confirmed, world-record 44.4 percent for its triple-junction solar cell (at 302 suns). Last year, Solar Junction hit an NREL-verified 44 percent cell efficiency (at 947 suns). "Sharp worked to widen the effective concentrator cell surface and ensure uniformity of width at the interface of the connecting concentrator cell and electrodes" to achieve the record, according to the company. The hope is that these more efficient compound semiconductors can improve the economics of concentrated photovoltaics (CPV). CPV has a few tens of megawatts in the field. The largest CPV deployment in North America is the 30-megawatt Alamosa site in Colorado owned by The Carlyle Group with hardware from Amonix. Soitec has large CPV plants in the works in the U.S. and South Africa. Amonix had to shut down its Las Vegas production facility in July of last year and has gone quiet. SolFocus has been looking for a buyer for some time now; GreenVolts is out of business. JDSU has quietly exited the CPV cell market after acquiring QuantaSol. Yet studies show 70 percent theoretical efficiencies from a 5- or 6-junction cell. Experts have suggested that 50 percent cell efficiency could be achievable in three to five years, which could get CPV module efficiencies to over 40 percent.

Staples Reaches Milestone of 500 Energy Star Buildings

[SustainableBusiness.com News, June 27] Staples is becoming a leader in solar, adding it on many stores without much fanfare, and now we've learned they are doing the same on energy efficiency in their buildings. 500 buildings have earned EPA's Energy Star certification, including stores, distribution centers and sales offices nationwide. The company's goal is to have 1,000 buildings certified by the end of 2016. Its biggest goal is to cut global carbon emissions *50*% by 2020 from a 2010 baseline. First recognized by the EPA for energy efficiency in 1999, this year Staples received its highest award - Partner of the Year, Sustained Excellence Award, for showing outstanding leadership in energy efficiency year after year.

U.S. Added 6 MW of Biomass Capacity in May

[Biomass Magazine, June 25] On June 18 the Federal Energy Regulatory Commission released the May edition of its Office of Energy Projects Energy Infrastructure Update, showing that the U.S. has added 116 MW of biomass power capacity since the beginning of the year. A total of four new biomass energy generation units were brought online in May, with a combined capacity of 6 MW. Since the beginning of the year, 36 biomass generation units have been brought online. Together, these 36 units have a combined capacity of 116 MW. In comparison, 64 biomass generation units with a combined capacity of 303 MW were brought online during the first five months of 2012.

This Summer's Residential Electric Bills Lowest in Four Years

[EL&P, June 25] Average U.S. homeowners can expect to pay a total of $395 June through August for their electric power bills — the cheapest in four years, according to the Energy Information Administration (EIA). This figure is down 2.5 percent from the summer of 2012. The higher electricity prices are expected to be offset by a drop in electricity use to meet lower cooling demand due to forecasted milder summer temperatures, according to Power Engineering. Average electricity demand is expected to be down 4.6 percent this summer, while average retail prices are expected to increase 2.2 percent, according to the June Short-Term Energy Outlook, resulting in lower power bills for June-August.

ENERGY/GENERAL

Chinese Firm Is Charged in Theft of Turbine Software

[New York Times, June 27] WASHINGTON — China's biggest wind turbine company and two of its executives conspired with an employee of a Massachusetts wind company to steal the American firm's software for controlling the flow of electricity, causing $800 million in damages, according to an indictment on Thursday. The indictment by a federal grand jury in Madison, Wis., outlined actions that the Chinese firm, Sinovel, took against AMSC, formerly the American Superconductor Corporation, and represents the latest skirmish in a series of trade disputes between the United States and China involving renewable energy. AMSC said the theft in 2011 led to the loss of 500 jobs and cited the damages as lost sales and trade secrets. The two Chinese executives are in China, and the former employee, who was working for AMSC in Austria, has returned home to Serbia, according to John W. Vaudreuil, the United States attorney. He said that the United States did not have extradition treaties with either nation, but the accused could be arrested if they traveled to a country with which the United States does have an extradition treaty. Sinovel will face a trial here, he said, and could face fines equal to twice the damages, plus restitution to AMSC.

Oil Price Stays Above $97 on Improving US Data

[Associated Press, June 28] The price of oil rose Friday as the U.S. economic outlook brightened and concerns eased about a credit crunch in China. Benchmark oil for August delivery was up 21 cents to $97.26 per barrel in electronic trading on the New York Mercantile Exchange. The contract rose $1.55 to finish at $97.05 on Thursday after the U.S. government released data showing an increase in consumer spending and home sales while jobless claims fell.

USGS Assessment Finds Mean CO2 Storage Potential of 3,000 Gigatonnes in US

[The New Fuelist, June 27] The United States has the potential to store a mean of 3,000 gigatonnes of carbon dioxide in geologic basins throughout the country, according to the first detailed national geologic carbon sequestration assessment released today by the US Geological Survey (USGS). The assessment comes on the heels of a national climate action plan announced by President Obama. (Earlier post) The US Energy Information Administration (EIA) estimates that in 2011, the United States emitted 5.5 metric gigatons of energy-related CO_2, while the global emissions of energy-related CO_2 totaled 31.6 metric gigatons. Based on present-day geologic and hydrologic knowledge of the subsurface and current engineering practices, this assessment looked at the potential for CO_2 storage in 36 basins in the United States. The largest potential by far is in the Coastal Plains region, which accounts for 2,000 metric gigatons, or 65%, of the storage potential. Two other regions with significant storage capacity include the Alaska region and the Rocky Mountains and Northern Great Plains region. Technically accessible storage resources are those that can be accessed using today's technology and pressurization and injection techniques. The most common method of geologic carbon storage involves pressurizing CO_2 gas into a liquid, and then injecting it into subsurface rock layers for long-term storage.

INDUSTRIES AND TECHNOLOGIES

Debating and Debunking AC vs. DC

[FierceEnergy.com, June 28] Approximately 80 percent of the power loads in commercial and residential structures are now direct current, including those electricity loads being served by alternating current power grids, according to Navigant Research. The market for DC distribution networks is not a single, cohesive sector but consists of several disparate opportunities, including data centers, green telecommunication towers, DC subsystems within grid-tied commercial buildings, and off-grid military networks. Some industry players conclude that due to broad political and policy support for inverter-based native DC power sources it makes inherent sense to reduce DC-AC-DC conversion losses and integrate DC distribution networks into the power supply infrastructure. That is the argument for DC, but there is much more to the story. "There is heated debate about the advantages and disadvantages of DC, and several myths that still need to be debunked in order for this class of power distribution equipment to become mainstream," said Peter Asmus, principal research analyst with Navigant Research. "One misconception is that DC is only 1 percent or 2 percent more efficient than AC grids. In fact, research by Lawrence Berkeley National Laboratory shows that medium voltage DC networks are 7 percent to 8 percent more efficient than AC."

DOE to Invest $3.5mn in Advanced Nuclear Reactor Projects

[Power Engineering, June 27] The Department of Energy announced $3.5 million for four advanced nuclear reactor projects that go beyond traditional light water designs, according to *Electric Light & Power/POWERGRID International*. These projects — led by General Atomics, GE Hitachi, Gen4 Energy and Westinghouse — will address key technical challenges to designing, building and operating the next generation of nuclear reactors. "Public-private research in advanced nuclear reactors will help accelerate American leadership in the next generation of nuclear

energy technologies and enable low-carbon nuclear power to be a significant contributor to the U.S. energy economy," said Energy Secretary Ernest Moniz. With support from the DOE, private industry and the DOE's national laboratories have achieved significant advances that boost the safety and efficiency of new nuclear power reactors worldwide. For example, the DOE's early research and development investments in passive safety laid the foundation for the nuclear reactors currently under construction in Georgia and South Carolina. The projects announced today will further advance nuclear energy technology — providing more options for low-carbon energy.

SolarCity Says Batteries Reduce Risk of Utility Backlash

[Bloomberg, June 26] SolarCity Corp. (SCTY), the rooftop power producer that's tripled in value this year, is developing storage systems that will reduce its dependence on utilities within two years. The company plans to introduce in 2015 a bundled package of solar panels to generate power during the day and batteries that will retain the power for use at night, Chief Executive Officer Lyndon Rive said in an interview today. San Mateo, California-based SolarCity will test it at 100 sites this year. Adding storage will eliminate the company's need to sell power to utilities through an arrangement known as net metering, Rive said. The company typically sends power to the grid during the day, when many homes are empty, on behalf of homeowners who get a credit that's applied to energy they consume later.

Solar PV, Energy Storage Combine in Commercial-Scale Microgrid

[SustainableBusiness.com News, June 27] Standard Solar and Solar Grid Storage have installed one of the first commercial-scale microgrids in the US. It consists of a solar PV array connected to a energy storage system that interacts with the grid - it's located at Konterra Realty's Maryland headquarters. The "islandable" microgrid system is powered by a 402 kilowatt solar PV system, and in the event of a grid power outage, a lithium-ion energy storage system kicks in to keep critical operations going. Widespread implementation of grid-connected energy storage systems is key to solar PV becoming a mainstream energy supplier," says Tony Clifford, CEO of Standard Solar. The system has the potential to reduce PV project costs and offers benefits to hosts including backup power, demand reduction and peak shaving. Moreover, it can enhance grid reliability by helping balance the grid through frequency regulation, volt-ampere reactive (VARs) compensation, and demand response services.

The Internet of Cars is Approaching a Crossroads

Wireless vehicle networks could make driving safer and more efficient, but the cost of deployment will be significant.

[MIT Tech Review, June 27] The phrase "vehicle-to-vehicle communications" might currently mean little more than a few choice words hurled through an open car window. In a few years, however, it could be synonymous with technology that makes driving safer, less polluting, and certainly less antagonistic. This week, officials from the U.S. Department of Transportation in Washington, DC, will see the technology in action, in a demonstration organized by experts from the University of Michigan's Transportation Research Institute and various communications equipment and car manufacturers. The demos will showcase a way for vehicles to exchange information—including their position, direction, and speed—with other similarly equipped vehicles as well as with roadside equipment such as traffic lights and tollbooths. The result is a peer-to-peer communication network capable of alerting drivers and onboard computers about what's happening on the road—and what may be about to happen next. The technology, which could have significant safety benefits, is at something of a crossroads. Toward the end of the year, the Department of Transportation will decide whether to mandate that future cars include some sort of vehicle-to-vehicle communication technology or leave it to the market.

Water Issues Challenge Power Generators

[PowerMag.com, July 1] Water is essential to thermoelectric power generation, but drought and growing competition for water from myriad other uses can have major effects inside the power plant, impacting operations and, ultimately, reliability. Consider these recent examples. Dominion's Millstone nuclear plant in Connecticut had to shut down a reactor last August because the water it drew from Long Island Sound was too warm. In response, Dominion asked the Nuclear Regulatory Commission in May this year for permission to use the seawater at 80F, up from 75F. A decision is expected in 2014, following a technical review. Also last summer, Exelon's two-unit Braidwood nuclear station near Chicago needed special permission to operate after the temperature in its cooling water pond rose to 102F, four degrees above its normal limit. Elsewhere in the U.S., low water levels on parts of the Mississippi stalled coal barges headed to power plants, forcing the U.S. Army Corps of Engineers to dredge channels to maintain commercial barge traffic. Droughts in Europe in 2003 and 2006 forced the shutdown or curtailment of a number of thermoelectric units. During the 2003 drought, for example, French nuclear operators had to shut down as much as 25% of the country's nuclear fleet. Drought conditions affect hydroelectric generation, too. As *POWERnews* reported in March, Brazil, which sources 67% of its power from hydro, has suffered the worst drought in 50 years, causing dams in the northeast to fall to 32% of capacity. Both power generators and electricity consumers have seen price spikes as a result. One of the most dramatic examples in the U.S. is the visibly lower water levels in Lake Mead and

Lake Powell, along the Colorado River. The light-colored rock in this issue's cover photo shows how far below historic levels Lake Mead—which supplies water for generation at the iconic Hoover Dam near Las Vegas, Nev.—was in November 2010.

LEGISLATION AND REGULATION

Agencies Told To Push Wires Projects in Western Corridors

[Energy Prospects West, June 25] President Obama on June 7 ordered federal agencies to accelerate transmission-project development within designated corridors crossing federal lands in the West. In a memo to the heads of DOE, the Interior Department and three other Cabinet agencies, Obama pushed for speeding up permitting of transmission upgrades and expansion projects in the corridors, to accommodate renewable-energy generation, beef up reliability and clear away grid congestion. The memo directs the heads of the Energy, Interior, Agriculture, Defense and Commerce departments to "strongly encourage" use of the corridors by transmission developers, and also to assess whether any corridor additions or modifications are needed. The Bureau of Land Management in 2009 finalized more than 6,000 miles of corridors across federal lands in 11 Western states, including the four Northwest states and California. The Energy Policy Act of 2005 mandated the corridors. In addition, Obama's order directed federal departments to cooperate with states, tribes and local governments to find ways of preventing or minimizing transmission-project impacts on natural or cultural resources.

Energy Sector Reacts to Obama Climate Change Plan

[EL&P, June 25] Making climate change the centerpiece of his second-term energy policy, President Barack Obama unveiled a package of about a dozen policies his White House said will change the way American makes and consumes energy. In the absence of Congressional action, the president's energy policy push relies heavily on the Environmental Protection Agency's ability to regulate carbon dioxide under the Clean Air Act. The Obama administration and the Environmental Protection Agency (EPA) have already begun steps to regulate carbon dioxide and other greenhouse gases from newly built power plants, but rules to regulate the nation's existing power generation fleet are still being written. In his June 25 speech, Obama said he would direct EPA to finalize and implement these rules. The package of policies also included measures to boost the country's energy efficiency and approve renewable energy projects on public lands through the Department of the Interior. Marty Durbin, president and CEO of America's Natural Gas Alliance, said natural gas could have a place in helping the U.S. lower its overall carbon emissions. "While many details are yet to come, it's worth noting that President Obama again recognized the benefits of natural gas as an American source of energy that is clean, reliable and affordable. Thanks in large part to natural gas, our nation's carbon emissions are at 20-year lows, a milestone accomplished principally though market forces that can be traced directly to the shale gas revolution in states and communities across the country." Durbin went on to say he hoped the president would focus on the job creation potential of natural gas rather than pursuing tax policies and regulations that put the fossil fuel sector at risk. "We're concerned, therefore, that the president continues to single out the oil and natural gas industry for punitive tax treatment. Like all other capital-intensive industries, cost recovery is critical to the success of the natural gas industry. So, for example, eliminating the Intangible Drilling Cost deduction would lower investment and production, not only increasing natural gas costs, but diminishing our ability to deliver the jobs, environmental benefits and energy security that come with domestic natural gas production." Representing the coal industry, the American Coalition for Clean Coal Electricity's president and CEO Mike Duncan said coal-fired power generation is already well on its way to producing energy with fewer emissions. "Coal power has evolved significantly over the past decade. Thanks to clean coal technologies, coal-based electricity continues to dramatically improve its environmental footprint. The newest coal-fueled power plants operating today are highly efficient, utilize less coal, and have lower emissions. Coal power is necessary to meet future energy demands and is progressing as quickly as technology is evolving. Duncan went on to address EPA regulations, adding that federal standards do more harm than good if they are not practical.

EPA Strengthens Energy Star Requirements for Refrigerators and Freezers/Encourages "Connected" Features, Including Smart Grid Functionality

[EPA Newsroom, June 27] Under the new standards, Energy Star certified refrigerators and freezers will use at least 10 percent less energy than models meeting 2014 federal minimum efficiency standards. If all refrigerators and freezers sold in the United States were to meet the updated requirements, energy cost savings would grow to more than $890 million each year and reduce annual greenhouse gas emissions by the equivalent of those from more than one million vehicles. Additionally, by recycling an old refrigerator and replacing it with a new Energy Star certified refrigerator, consumers can save from $150–$1,100 on energy costs over the product's lifetime.

Fracking Critics Unhappy with Obama Climate Speech

[Associated Press, June 27] President Barack Obama's speech this week on climate change forcefully rejected some key arguments made by opponents of natural gas fracking, upsetting some environmental groups that otherwise back his climate goals. Obama, in his address Tuesday calling for urgent action to address climate change, praised what he called "cleaner-burning natural gas" and its role in providing safe, cheap power that he said can also help reduce U.S. carbon dioxide emissions. Regulators in many states with heavy new drilling activity say fracking, a colloquial term for hydraulic fracturing, is being done safely and is essentially similar to the hundreds of thousands of oil and gas wells that have been drilled all over the nation. The drilling boom has reduced oil and gas imports and generated billions of dollars for companies and landowners. Many scientists and environmental groups also agree with Obama's main point: that while there are some negative effects from natural gas, burning coal is far worse for the environment and public health. There's no dispute that natural gas burns far cleaner than coal, but its main component, methane, is a potent heat-trapping gas. Some environmental groups advocate a total rejection of all fossil fuels and an all-out effort to switch to renewables such as wind turbines and solar panels. They also say people living close to drilling operations have suffered from too much pollution.

Germany Blocks EU Carbon Cap to Protect Automakers

[Associated Press, June 28] Germany has blocked a European Union agreement on capping car carbon emissions because the deal could have cost jobs and harmed its domestic auto industry, officials said Friday. The blunt admission that Europe's biggest economy put business interests before environmental standards is at odds with Germany's image as a champion of green issues. The country has invested heavily in renewable energy and Chancellor Angela Merkel has previously advocated a global agreement to curb climate change, which scientists say is largely driven by carbon emissions. "At a time when we're spending days sitting here talking about employment, we must pay attention not to weaken our own industrial base despite the need to make progress on environmental protection," Merkel said at a meeting in Brussels, where EU leaders were discussing the continent's youth unemployment crisis. Environmental campaigners had lobbied to limit emissions from passenger cars to an average of 95 grams of CO2 per kilometer within seven years. But Germany wants to allow automakers such as BMW, Daimler and Audi _ whose emissions are higher than those of their European competitors _ to collect "credits" they can use to offset higher pollution levels beyond 2020.

Your Guide to the White House Climate Action Plan

[POWERnews, June 25] President Obama's highly anticipated Climate Action Plan (CAP) released today outlines a wide variety of executive actions founded on three pillars: slashing U.S. carbon pollution through stringent rules for new and existing power plants while doubling renewables deployment and promoting fuel switching from coal to natural gas; preparing the U.S. for impacts of climate change; and leading international efforts to combat global climate change. President Obama in 2009 pledged that the U.S. would reduce its greenhouse gas (GHG) emissions in the range of 17% below 2005 levels if all other major economies agreed to limit their emissions as well. And in his February State of the Union address he pledged that his administration would enact executive actions if Congress did not pursue a "bipartisan, market-based solution" to tackle climate change. In its Tuesday-released CAP, the White House rationalizes an urgent need for executive action on climate change, citing current impacts of climate change across the country and the world, saying: "These changes come with far-reaching consequences and real economic costs." Climate disasters from 11 different weather and climate events last year alone resulted in estimated losses of more than $1 billion each across the U.S.—for a total of more than $110 billion in estimated damages.

WESTERN POWER

L.A. Launches Feed-In Tariff Solar Program

[Power Engineering, June 27] Los Angeles has launched its program that pays building owners who install solar panels on their properties for contributing power into the city's grid, according to a report from the *Associated Press*. The city connected the first installation, located on an apartment building in North Hollywood, to the grid Wednesday. According to the report, the program is expected to generate around 150 MW of solar energy for the city and is a step toward transforming the city's power supply to meet the state mandate of having one-third of the city using renewable energy by 2020.

Seattle Pilot Tests New Approach to Building Efficiency

[Energy Prospects West, June 25] The city of Seattle is testing a new approach to commercial building energy efficiency that should make larger investments in energy conservation more economically attractive. The pilot program, announced June 12, would set up a process to allow building developers -- or outside investors -- to receive returns on energy efficiency investments over a 20-year period, rather than through a one-time up-front

payment. Seattle City Light has historically used the latter approach, Jorge Carrasco, general manager and CEO, noted at a news conference announcing the pilot. That method essentially looks at opportunities to retrofit existing buildings, estimates the savings from installing the energy efficiency measures, and provides the building owner with an up-front payment. "While we keep an eye on it, how a building performs [after the retrofit] is not something that's monitored or drives the transaction," he said. The pilot's approach represents a "fundamental change," Carrasco said, using a model that estimates how a commercial building would have performed under the city's current energy code, compares that to the electricity it actually uses, and delivers the difference to an investor who pays for the energy-efficiency upgrades. Building tenants continue to pay rates based on the electricity they would have used if the building had been built to code, using the existing rate structure, Carrasco said. The investor -- whether that's the developer, building owner or a third party -- would receive a payment based on that portion of the tenant's payment that represents the energy saved, while the utility would receive part of that to compensate for its fixed costs, along with payment for the actual electricity used. The finer details of the pilot aren't nailed down, but the players are in place. Besides Seattle and City Light, they include the Bullitt Foundation and its newly completed center, a six-story, 50,000-square-foot building near downtown Seattle that's billed as the "greenest building in the world." Home to the Bullitt Foundation and other tenants, the center was designed as a net-zero-energy building and is part of the city's Living Building Pilot Program, aimed in part at encouraging the development of ultra-efficient green buildings.

NuScale Project Seeks To WIN Over the West

[Sustainable Business Oregon, July 1] Oregon and other Western states have agreed to work a demonstration project aiming to study the “deployment of safe, affordable nuclear energy” from small modular reactors produced by a Corvallis company. Oregon will work on the Western Initiative for Nuclear project with NuScale Power LLC. The project will study whether a multi-module NuScale small modular reactor could be built at a site like the Idaho National Laboratory and be operational by 2024. The project could also lead to similar efforts in other Western states, according to a release. WIN is viewed as the initial demonstration project for a potential series of projects that may be developed in other states by WIN, described as a consortium of the utilities Energy Northwest and Utah Associated Municipal Power Systems. “Energy Northwest carefully investigated options for small modular reactors to fill future energy needs, including helping to integrate renewable sources,” said Dale Atkinson, Energy Northwest’s vice president, in a release. “We selected NuScale as our technology of choice. The NuScale design offers clear benefits in safety, cost-effectiveness and ease of operation.” Oregon Gov. John Kitzhaber signed off on the project.

ARIZONA STATE INCENTIVES/POLICIES

ARIZONA COMMERCE AUTHORITY (ACA)

- Angel Investment Tax Credit Program - The main objective of the Angel Investment program is to expand early stage investments in targeted Arizona small businesses. The program accomplishes this goal by providing tax credits to investors who make capital investment in small businesses certified by the Arizona Commerce Authority (ACA). To view the list of businesses that have been certified under this program please click here.

Income Tax Credit Provisions

An investor seeking an income tax credit must document to the ACA the investment was made in either a qualified rural or bioscience company or any other qualified small business. For a qualified bioscience or rural company, the tax credit may total up to 35% of the investment amount over three years; for any other qualified business, the tax credit may total up to 30% over three years. If the tax credits exceed the investor’s income tax liability, any unused tax credit amount may be carried forward for up to three taxable years as long as the investor timely claims the credits with Revenue.

The ACA may authorize up to $20 million in tax credits to qualified investors beginning July 1, 2006 through June 30, 2016. The tax credits will be authorized on a first come, first served basis, which is established by the date and time the investor files an application with the ACA. Download the Angel Tax Credit Allocation Table Angel Tax Credit Allocation Table to view the remaining amount of tax credits available. For more detailed information please see below or direct questions to the Program Manager.

- Arizona Innovation Accelerator Fund - The Arizona Innovation Accelerator Fund Program is an $18.2 million loan participation program funded through the U.S. Department of Treasury’s SSBCI and managed by the Arizona Commerce Authority. The goal of this program is to stimulate financing to small businesses and manufacturers, in collaboration with private finance partners, to foster business expansion and job creation in Arizona.

- Arizona Innovation Challenge - The Arizona Innovation Challenge is an investment in the minds of talented entrepreneurs in Arizona and around the world. The ACA will award $1.5 million to the most promising technology ventures that participate in the Challenge (awards may range from $100,000 to $250,000).

- AZ Fast Grant - Technology Commercialization Assistance - Next round of grants opening in mid November. This competitive grant enables Arizona-based technology companies to initiate the commercialization process. The grant will pay up to $7,500 to provide one or more of the following professional consulting services:
  - An expert review of the technology under development to determine if it already exists, is a good candidate for intellectual property protection and is likely to find an attractive market.
  - A commercialization feasibility study to identify showstoppers to commercialization before resources are spent commercializing a technology that is unlikely to succeed.
  - Other commercialization assistance such as training or preparation for the submission of a federal SBIR/STTR grant application or another acceptable means of technology commercialization.

- AZ Step Grant - Grant funding from the U.S. Small Business Administration (SBA) with matching funds contributed by the Arizona Commerce Authority (ACA) offering a number of services and tools to Arizona small businesses as they go global for the first time with sales or enter new, international markets.

- Commercial/Industrial Solar Energy Tax Credit Program - The primary goal of the Commercial/Industrial Solar Energy Tax Credit Program is to stimulate the production and use of solar energy in commercial and industrial applications by subsidizing the initial cost of solar energy devices. The program achieves this goal by providing an Arizona income tax credit for the installation of solar energy devices in Arizona business facilities. For more detailed information please see below or direct questions to the Program Manager.

- Healthy Forest - Harvesters, initial processors and transporters of small diameter timber, may receive: Transaction Privilege Tax Exemptions, Use Tax Exemption and New Job Income Tax Credits.

- Job Training Program offers job specific reimbursable grants for employers creating new jobs or increasing the skill and wage level of their current employees. Deadline: Year Round

- Renewable Energy Tax Incentive Program offers a refundable income tax credit and property tax reduction to companies in solar, wind, geothermal and other renewable energy industries who are expanding or locating a manufacturing or headquarters operation in Arizona. The tax credit is up to 10% of the total qualified investment amount and the property tax benefit can reduce a company's property taxes by up to 75%. Deadline: Year Round

- Research and Development Tax Credit is an Arizona income tax credit for increased research and development activities conducted in this state. Starting in 2010, a qualifying company may be eligible to claim a partial refund of its current year excess R&D credit. Applicants may apply at the end of their tax year but prior to filing a tax return with Revenue.

- Quality Jobs Tax Credit Program - Beginning July 1, 2011, this new program provides Arizona income tax credits for companies creating new jobs and investing in Arizona. The credit is valued at up to $9,000 over a 3-year period per each new employee and offers a 5-year carry forward provision for any unused tax credits. Eligibility qualifications are different for rural and metro areas.

- Bonds Administered by the Arizona Commerce Authority.

- Federal Programs

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- Pollution Control Tax Credit - Provides a 10 percent income tax credit on the purchase price of real or personal property used to control or prevent pollution.

- Renewable Energy Production Tax Credit - An income tax credit awarded to utility-scale generation systems based on the amount of electricity produced annually for a 10-year period using solar or wind energy. Questions can be directed to Georganna Meyer (602-716-6927) or Elaine Smith (602-716-6924).

- Sales Tax Exemption for Machinery and Equipment - Exemptions are available for:
  1. Machinery or equipment used directly in manufacturing, see ARS 42-5159(B)(1).

2. Machinery, equipment or transmission lines used directly in producing or transmitting electrical power, but not including distribution, see ARS 42-5159(B)(4).
3. Machinery or equipment used in research and development, see ARS 42-5159(B)(14).

Questions can be directed to Christie Comanita (602-716-6791).

- Solar Liquid Fuel Tax Credit - Income tax credits are available for research and development, production and delivery system costs associated with solar liquid fuel. Questions can be directed to Georganna Meyer (602-716-6927) or Elaine Smith (602-716-6924).

- Database of State Incentives for Renewables and Efficiency (DSIRE)
  - Arizona Incentives/Policies
  - Federal Incentives/Policies
  - Solar Policy News - DSIRE provides summaries of current solar policy developments and an archive of past solar policy developments. Current solar news appears below the news archive, which is searchable by several criteria.

GRANTS

The following solicitations are now available:
(Click on title to view solicitation)

- U.S. Dept. of Agriculture - Rural Development Grant Assistance
- FY2013 Economic Development Assistance Programs – Response due quarterly; September 13, 2013
- Rural Energy for America Program for FY2013 - Response due July 15, 2013
- 2014 National Urban and Community Forestry Grant Program - Response due July 15, 2013
- Solar, Heliospheric, and INterplanetary Environment – Response due August 21, 2013
- Clean Energy Manufacturing Innovation Institute – Response due August 29, 2013
- Water Sustainability and Climate - Responses due September 10,2013
- Concentrating Solar Power: Efficiently Leveraging Equilibrium Mechanisms for Engineering New Thermochemical Storage (CSP: ELEMENTS) - Response due August 21, 2013
- Clean Energy Manufacturing Innovation Institute- Response due August, 29, 2013
- Bio-refinery Assistance Program – Response due October 31, 2013
- Energy, Power, and Adaptive Systems – Response due November 1, 2013
- Electronics, Photonics, and magnetic Devices - Response due November 1, 2013
- SunShot Initiative - Responses due November 20, 2014
- Solid Waste Management Grant - Response due December 31, 2013
- Environmental Sustainability - Response due February 20, 2014
- Energy for Sustainability - Response due February 20, 2014
- Environmental Health and Safety of Nanotechnology - Response due February 20, 2014
- Particulate and Multiphase Processes- Response due February 20, 2014
- Thermal Transport Processes - Response due February 20, 2014
- SunShot "Race to the Roof" Initiative - Registration due October 31,2014
- Repowering Assistance Program – Ongoing
- Rural Business Enterprise Grants– Ongoing
- Rural Business Opportunity Grants– Ongoing
- Renewable Energy RFPs - Solicitations for Renewable Energy Generation, Renewable Energy Certificates, and Green Power – Various Deadlines

ENERGY-RELATED EVENTS

- DOE Office of Indian Energy Workshop: Tribal Commercial-Scale Renewable Energy Project Development
  July 9-11, 2013 Golden, CO

- Waste Conversion Technology Conference & Trade Show,
  September 15-17, 2013 San Diego, CA

- NASEO 2013 Annual Meeting
  September 15-18 Denver, CO

- 2013 SolarPACES
  September 17-20, 2013 Las Vegas, NV

- GEA Geothermal Energy Expo 2013
  September 29-October 2 Las Vegas, NV

- Solar Decathlon 2013
  Oct. 3-13, 2013 Irvine, CA

- IGSHPA Conference & Expo
  October 9-10, 2013 Las Vegas, NV

- AWEA Wind Energy Fall Symposium
  November 6-8 Colorado Springs, CO

- GreenBuild International Conference and Expo
  November 20-22 Philadelphia, PA

- Ecobuild America 2013
  December 9-13 Washington, D.C.

- Green Biz Forum 2014
  February 18-20, 2014 Phoenix, AZ

- Green Building Lecture Series
  Granite Reef Senior Center Scottsdale, AZ